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ABSTRACT

Assuming the direct connection between vocational instruction and work, I want to discuss the implications of language and language research and of new research on the human brain for the future of vocational education. A language such as ours which uses alphabet signs rather than pictorial characters greatly facilitates the development of modern science. This development in turn shapes the scope and depth of vocational education. The most exciting frontier in education today is the research being done on the human brain. Assuming that different specialized learning functions are carried out by different parts of the brain and that memory is stored in all parts of the brain, then the task for educators is coordinating the traditional literacy-based pedagogy with tube-teaching and hands on learning. Although learning motivation is not clearly understood, "relevance" plays an important part in the learning process. The task of the vocational educator is to remain committed to the goal of performance-based learning while recognizing that in order to produce a solid result in terms of performance the learner must be treated as a whole individual whose needs and motivations transcend the specific skills to do a tangible job. (Author)

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GIVING THE WORK A SOUL *

T. H. BELL

U.S. COMMISSIONER OF EDUCATION

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IN PREPARING THIS SPEECH, I DECIDED TO REVIEW THE DEFINITION OF VOCATIONAL EDUCATION AND HOW IT DIFFERS FROM CAREER EDUCATION, JOB TRAINING, AND VARIOUS OTHER LABELS WE ATTACH TO OUR PRODUCT. IT TURNS OUT THERE ARE ABOUT AS MANY DEFINITIONS OF THESE TERMS AS PEOPLE WHO USE THEM.

ONE OF THE MOST SATISFACTORY DEFINITIONS OF VOCATIONAL EDUCATION I FOUND CAME FROM YOUR EXECUTIVE DIRECTOR, LOWELL BURKETT. "VOCATIONAL EDUCATION," SAYS BURKETT, "MEANS ORGANIZED EDUCATIONAL PROGRAMS, SERVICES, AND ACTIVITIES WHICH ARE DIRECTLY RELATED TO THE PREPARATION OF INDIVIDUALS FOR PAID OR UNPAID EMPLOYMENT OR FOR ADDITIONAL PREPARATION FOR A CAREER REQUIRING OTHER THAN A BACCALAUREATE OR ADVANCED DEGREE."

THE KEY WORD IN THAT PARAGRAPH IS DIRECTLY. VOCATIONAL EDUCATION ASSUMES A DIRECT CONNECTION BETWEEN INSTRUCTION AND WORK.

BURKETT'S DEFINITION SEEMS TO ME TO BE A REASONABLY CONCISE AND FAIR DESCRIPTION OF THE PRIMARY GOALS OF VOCATIONAL EDUCATION. AT THE SAME TIME, IT IS OBVIOUS THAT SUCH A DESCRIPTION CAN BE INTERPRETED IN DIFFERENT WAYS BY DIFFERENT PEOPLE. I WANT TO DISCUSS WITH YOU THE IMPLICATIONS OF LANGUAGE AND LANGUAGE RESEARCH AND THE IMPLICATIONS OF NEW RESEARCH ON THE BRAIN FOR THE FUTURE OF VOCATIONAL EDUCATION.

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* PREPARED FOR ANNUAL CONVENTION OF THE AMERICAN VOCATIONAL ASSOCIATION; ANAHEIM, CALIFORNIA, DECEMBER 6, 1975, 10:45 A.M. PST (1:45 P.M. EST).

"STICKS AND STONES MAY BREAK MY BONES," GOES AN OLD CHILDREN'S SAYING, "BUT WORDS WILL NEVER HARM ME."

THE ENGLISH LANGUAGE IS PARTICULARLY RICH IN WORDS. THEORETICALLY, AN EXHAUSTIVE DICTIONARY OF CONTEMPORARY ENGLISH WOULD INCLUDE MORE THAN SIX HUNDRED FIFTY THOUSAND WORDS. THIS IS BECAUSE WE USE A SYSTEM OF WRITING BY ALPHABET SIGNS. AND THAT IS IN CONTRAST TO THE LANGUAGE OF CHINA, FOR EXAMPLE IN WHICH EACH WORD IS REPRESENTED BY A PICTORIAL CHARACTER; OR JAPANESE, WHICH USES A COMBINATION OF SYLLABLE SIGNS AND CHARACTERS. THE IDEA OF WRITING BY ALPHABET SIGNS IS NOT BY ANY MEANS OBVIOUS AND, AS FAR AS WE KNOW, HAS OCCURRED ONLY ONCE IN THE HISTORY OF THE WORLD.

SOME HISTORIANS OF SCIENCE BELIEVE THAT THE REPLACEMENT OF FEUDALISM IN CHINA ABOUT 200 B.C. BY A KIND OF MANDARIN BUREAUCRACY, RATHER THAN BY A MERCANTILE CAPITALISM, HAD MUCH TO DO WITH THE BIRTH OF MODERN SCIENCE OCCURRING IN THE WEST RATHER THAN IN THE EAST. I BELIEVE THE EVENT ALSO HAD MUCH TO DO WITH LANGUAGE. AND ALL OF THIS HAS MUCH TO DO WITH TECHNOLOGICAL DEVELOPMENT, WHICH DEMANDS VOCATIONAL AND TECHNICAL EDUCATION.

A FUNDAMENTAL ACADEMIC SKILL LIKE WRITING INFLUENCES SCIENCE AND SCIENTIFIC ADVANCEMENT, AND THIS VERY OBVIOUSLY SHAPES THE SCOPE AND DEPTH OF VOCATIONAL EDUCATION. TO ILLUSTRATE, CONSIDER THIS:

IT IS VERY DIFFICULT TO ENGAGE IN SCIENTIFIC DIALOGUE USING A PICTURE-BASED LANGUAGE, OR EVEN A SYSTEM OF WRITING BASED ON SYLLABLE SIGNS. IF THE SPEECH OF A PEOPLE HAS ONLY FIFTEEN CONSONANT AND FIVE VOWEL SOUNDS, AS IS TRUE OF JAPANESE, YOU CAN GET ONLY A LIMITED NUMBER OF COMBINATIONS OF THOSE SOUNDS FOR THE REPRESENTATION OF WORDS IN A SYSTEM OF SYLLABLE WRITING.

BUT WITH ALPHABET WRITING WE CAN MULTIPLY THE TWENTY-FOUR ENGLISH CONSONANT SOUNDS AND TWELVE OR MORE VOWEL SOUNDS INTO THOUSANDS OF SYLLABLES AND FURTHER MULTIPLY THE THOUSANDS OF SYLLABLES INTO MANY MORE THOUSANDS OF WORDS.

WORDS MAY NOT BREAK OUR BONES, BUT THEY SURELY CAN CONFUSE U'. I HAVE IN MIND TODAY THE WORD GAMES PEOPLE PLAY IN THE FIELD OF EDUCATION.

I THINK WE GET INTO THESE SEMANTIC DIFFICULTIES WHEN THE SIZE OF THE PIE BEGINS TO SHRINK. IN THE 1960S A GOOD DEAL OF MONEY WAS AVAILABLE FOR EDUCATION PROGRAMS OF MANY KINDS AT MANY LEVELS. NOW -- IN THE MID-1970S -- THE ECONOMY HAS TIGHTENED UP, AND FEDERAL DOLLARS, IN PARTICULAR, ARE HARDER TO COME BY. SIMULTANEOUSLY, ENROLLMENT IS DOWN AT THE ELEMENTARY AND SECONDARY LEVELS AND SHOWS PROMISE OF DECREASING AT THE POSTSECONDARY LEVEL, PARTLY BECAUSE OF CHANGES IN THE POPULATION FIGURES AND PARTLY FOR OTHER REASONS.

THE RESULT OF A TIGHTER ECONOMY AT THE SAME TIME THAT ENROLLMENTS ARE DECREASING MEANS THAT THE TOTAL PIE BECOMES SMALLER. SO WE ENGAGE IN SEMANTIC ARGUMENTS TO JUSTIFY THE STATUS QUO AND DEFEND OUR OWN SLICE.

EDUCATION IN MY VIEW IS A GREAT DEAL MORE THAN PREPARATION FOR LIFE. I THINK EDUCATION IS LIFE ITSELF, BECAUSE ALL HUMAN EXPERIENCE TEACHES US.

FURTHER, I BELIEVE EDUCATION IS NOT SOMETHING WE CAN STORE IN A CERTAIN LOCATION AND SPOON FEED TO PEOPLE AT SPECIFIC AGES IN THEIR LIVES. WE ENCOUNTER VERY REAL PROBLEMS WHEN WE TRY TO COMPARTMENTALIZE EDUCATION AND DEFEND SPECIFIC UNITS AS INDEPENDENT MODULES. YET, IT IS PATENTLY IMPOSSIBLE TO MANAGE SUCH A VAST UNDERTAKING AS OUR EDUCATION ENTERPRISE WITHOUT SOME DIVISION OF LABOR.

THE MOST EXCITING FRONTIER IN EDUCATION TODAY IS NOT IN THE TRADITIONAL ACADEMIC SECTOR OR IN THE NEW FIELD THAT WE CALL CAREER EDUCATION. IT IS IN THE WORK BEING DONE BY RESEARCHERS FROM MANY DISCIPLINES ON THE HUMAN BRAIN. THIS NEW RESEARCH WILL HAVE VAST IMPORTANCE FOR VOCATIONAL EDUCATION.

AFTER ALL OF THE HUNDREDS UPON HUNDREDS OF THEORIES OF EDUCATION THAT HAVE BEEN PROPOUNDED THROUGH THE YEARS, WE ARE JUST NOW ON THE THRESHOLD OF DISCOVERING THAT WE REALLY KNOW VERY LITTLE ABOUT HOW AND WHY WE LEARN. WE DO NOT YET EVEN UNDERSTAND HOW AND WHERE MEMORY IS STORED IN THE BRAIN.

WE ARE ONLY NOW BEGINNING TO DISCOVER THE EXTENT TO WHICH THE TWO HEMISPHERES OF THE BRAIN OPERATE INDEPENDENTLY OF EACH OTHER. IT APPEARS THAT LANGUAGE AND COMPUTATIONAL SKILLS ARE LOCATED, PARTICULARLY IN RIGHT-HANDED PEOPLE, IN THE BRAIN'S LEFT HEMISPHERE, WHILE TASKS OF SYNTHESIS, SPATIAL PERCEPTION, AND SUCH ARTISTIC ACTIVITIES AS MUSIC ARE LARGELY CARRIED OUT IN THE RIGHT HEMISPHERE.

THIS APPARENT DIVISION OF LEARNING FUNCTIONS BY THE BRAIN HAS TREMENDOUSLY SIGNIFICANT RAMIFICATIONS IN THE TELEVISION AGE. TRADITIONALLY, EDUCATION HAS BEEN PERCEIVED AS MORE OR LESS A PYRAMIDAL STRUCTURE, WITH THE "THREE RS" AT THE BASE. THE HIGHER A PERSON'S RATE OF LITERACY, GOES THE OLD WAY OF THINKING, THE HIGHER HIS PROMISE OF EDUCATION. I'M NOT SURE THIS FORMULA HOLDS TRUE IN THE AGE OF TELEVISION.

AT THE SAME TIME THAT WE HEAR CRIES THAT TODAY'S YOUNG PEOPLE CANNOT READ, WRITE, SPELL, OR CALCULATE AS WELL AS WE COULD AT THEIR AGE, WE ARE AWARE THAT TODAY'S YOUNG PEOPLE ARE IN MANY WAYS "BETTER EDUCATED" -- I PUT QUOTATION MARKS AROUND THAT PHRASE, BETTER EDUCATED -- THAN WE WERE. THAT IS, TODAY'S YOUNG PEOPLE SEEM TO KNOW MORE THAN THE PREVIOUS GENERATION KNEW AT THE SAME AGE.

I THINK THE ANSWER IS THAT TODAY'S YOUNG PEOPLE DO KNOW MORE THAN WE DID AT THAT AGE, AND A GREAT DEAL OF WHAT THEY KNOW THEY LEARNED FROM TELEVISION. WHAT WE NEED TO BE LOOKING AT IS WHAT KINDS OF THINGS THEY KNOW, HOW DID THEY COME BY THAT KNOWLEDGE, AND WHAT ARE THEY GOING TO DO WITH IT? WE MAY BE ON THE VERGE OF A WHOLE NEW SYNTHESIS OF PEDAGOGY.

IF IT IS TRUE, AS THE TENTATIVE CONCLUSIONS OF THE BRAIN RESEARCHERS SEEM TO INDICATE, THAT DIFFERENT SPECIALIZED LEARNING FUNCTIONS ARE CARRIED OUT BY DIFFERENT PARTS OF THE BRAIN, AND IF IT IS TRUE THAT MEMORY IS STORED IN ALL PARTS OF THE BRAIN, WITH A HIGHLY COMPLEX AND EFFICIENT SYSTEM OF CROSS-INDEXING, THEN THE NEW TASK FOR EDUCATORS WOULD SEEM TO BE ONE OF COORDINATING THE TRADITIONAL LITERACY-BASED PEDAGOGY WITH TUBE-TEACHING AND HANDS-ON LEARNING.

THIS COMBINATION OF TRADITIONAL ACADEMIC INSTRUCTION WITH AN APPLICATION TO A SPECIFIC TASK AND A SET OF REQUIRED SKILLS TAUGHT IN AN APPROACH TO INDIVIDUALIZED INSTRUCTION IN A HANDS-ON SITUATION IS EXACTLY WHAT VOCATIONAL EDUCATION IS ALL ABOUT. BEING RESULTS ORIENTED, VOCATIONAL EDUCATION CARRIES A BUILT-IN SYSTEM OF ACCOUNTABILITY. THE SUCCESS OR FAILURE OF A STUDENT IN VOCATIONAL EDUCATION REFLECTS DIRECTLY ON THE TEACHER. EITHER THE STUDENT SUCCEEDS IN APPLYING IN ACTUAL PERFORMANCE THAT WHICH HE OBSERVES OR HE DOES NOT.

THE VOCATIONAL EDUCATOR MUST BE RESPONSIVE NOT ONLY TO THE INDIVIDUAL NEEDS OF EACH STUDENT BUT TO THE STUDENT'S VOCATIONAL ENVIRONMENT, WHICH MEANS THE STUDENT'S FAMILY, HIS COMMUNITY, HIS OTHER SCHOOL LIFE, AND HIS EMPLOYER. IN VOCATIONAL EDUCATION, MORE THAN IN ANY OTHER SECTOR OF THE EDUCATION ENTERPRISE, THE STUDENT IS MADE AWARE OF THE TOTAL RELEVANCE OF HIS LEARNING ACTIVITY. THESE CONCEPTS WERE COMPLAINED ABOUT BY ONE OF HISTORY'S GREAT CRITICS.

IN A BOOK CALLED THE INTELLIGENT WOMAN'S GUIDE TO SOCIALISM, CAPITALISM, SOVIETISM, AND FASCISM, PUBLISHED NEARLY A HALF-CENTURY AGO, GEORGE BERNARD SHAW BEMOANED THE FATE OF THE NEW INDUSTRIAL WORKER. THIS IS HOW HE DESCRIBED IT:

> FORMERLY THE WHOLE WORK OF MAKING CLOTHES, FROM THE SHEARING OF THE SHEEP TO THE TURNING OUT OF THE FINISHED AND WASHED GARMENT READY TO PUT ON, HAD TO BE DONE IN THE COUNTRY BY THE MEN AND WOMEN OF THE HOUSEHOLD, ESPECIALLY THE WOMEN; SO THAT TO THIS DAY AN UNMARRIED WOMAN IS CALLED A SPINSTER. NOWADAYS NOTHING IS LEFT OF ALL THIS BUT THE SHEEP-SHEARING; AND EVEN THAT, LIKE THE MILKING OF COWS, IS BEING DONE BY MACHINERY, AS THE SEWING IS. GIVE A WOMAN A SHEEP TODAY AND ASK HER TO PRODUCE A WOOLLEN DRESS FOR YOU; AND NOT ONLY WILL SHE BE QUITE UNABLE TO DO IT, BUT YOU ARE AS LIKELY AS NOT TO FIND THAT SHE IS NOT EVEN AWARE OF ANY CONNECTION BETWEEN SHEEP AND CLOTHES...

THUS THE CAPITALIST SYSTEM HAS PRODUCED -- SAID SHAW -- AN ALMOST UNIVERSAL IGNORANCE OF HOW THINGS ARE MADE AND DONE ON A GIGANTIC SCALE. WE HAVE TO BUY BOOKS AND ENCYCLOPEDIAS TO FIND OUT WHAT IT IS WE ARE DOING ALL DAY; AND AS THE BOOKS ARE WRITTEN BY PEOPLE WHO ARE NOT DOING IT, AND WHO GET THEIR INFORMATION FROM OTHER BOOKS, WHAT THEY TELL US IS FROM TWENTY TO FIFTY YEARS OUT OF DATE, AND UNPRACTICAL AT THAT. AND OF COURSE MOST OF US ARE TOO TIRED OF OUR WORK WHEN WE COME HOME TO WANT TO READ ABOUT IT. WHAT WE NEED IS A CINEMA TO TAKE OUR MINDS OFF IT AND FEED OUR IMAGINATION.

SHAW WENT ON TO SAY:

IT IS A FUNNY PLACE, THIS WORLD OF CAPITALISM, WITH ITS ASTONISHING SPREAD OF IGNORANCE AND HELPLESSNESS, BOASTING ALL THE TIME OF ITS SPREAD OF EDUCATION AND ENLIGHTENMENT. THERE STAND THE THOUSANDS OF PROPERTY OWNERS AND THE MILLIONS OF WAGE WORKERS, NONE OF THEM ABLE TO MAKE ANYTHING, NONE OF THEM KNOWING WHAT TO DO UNTIL SOMEBODY TELLS THEM, NONE OF THEM HAVING THE LEAST NOTION OF HOW IT IS THAT THEY FIND PEOPLE PAYING THEM MONEY, AND THINGS IN THE SHOPS TO BUY WITH IT. AND WHEN THEY TRAVEL THEY ARE SURPRISED TO FIND THAT SAVAGES AND ESKIMOS AND VILLAGERS WHO HAVE TO MAKE EVERYTHING FOR THEMSELVES ARE MORE INTELLIGENT AND RESOURCEFUL! THE WONDER WOULD BE IF THEY WERE ANYTHING ELSE.

> WE SHOULD DIE OF IDIOCY THROUGH DISUSE OF OUR MENTAL FACULTIES IF WE DID NOT FILL OUR HEADS WITH ROMANTIC NONSENSE OUT OF ILLUSTRATED NEWSPAPERS AND NOVELS AND PLAYS AND FILMS. SUCH STUFF KEEPS US ALIVE; BUT IT FALSIFIES EVERYTHING FOR US SO ABSURDLY THAT IT LEAVES US MORE OR LESS DANGEROUS LUNATICS IN THE REAL WORLD.

SHAW WAS WRITING SOMEWHAT TONGUE-IN-CHEEK, AS USUAL. NEVERTHELESS, THERE IS A BIG ELEMENT OF TRUTH IN WHAT HE WROTE. HOW MANY OF US TODAY FAIL TO SEE THE RELEVANCE OF WHAT WE DO TO THE GOALS AND CONDITIONS OF THE SOCIETY!

ALTHOUGH WE ARE JUST NOW BEGINNING TO REALIZE HOW LITTLE WE KNOW ABOUT THE PROCESSES OF LEARNING, WE DO AT LEAST UNDERSTAND THAT PEOPLE LEARN ONLY WHEN THEY ARE MOTIVATED TO LEARN. WHAT MOTIVATES PEOPLE TO LEARN? THE ANSWER TO THAT QUESTION DIFFERS NOT ONLY FROM PERSON TO PERSON BUT FROM MINUTE TO MINUTE FOR EACH INDIVIDUAL. YET I THINK THERE IS A MOTIVATIONAL FACTOR COMMON TO ALL OF US IN MOST LEARNING SITUATIONS THAT CAN BE SUMMED UP IN THE WORD "RELEVANCE." WE LEARN MOST EAGERLY THAT WHICH SEEMS MOST RELEVANT TO US AS INDIVIDUALS.

I COMMEND THE VOCATIONAL EDUCATION COMMUNITY ON ITS LONG-HELD RECOGNITION OF THE IMPORTANCE OF RELEVANCE TO THE PROCESS OF LEARNING. WITH THE ORIENTATION OF ITS GOALS TOWARD SPECIFIC PERFORMANCE, VOCATIONAL EDUCATION HAS NOT ONLY A BUILT-IN SYSTEM OF ACCOUNTABILITY, BUT A BUILT-IN FACTOR OF MOTIVATION. IF THE GOAL IS TO CONSTRUCT ONE'S OWN HOUSE, IT IS EASY TO SEE THE RELEVANCE OF BEING ABLE TO CALCULATE ANGLES, DETERMINE STRESS, MEASURE DIMENSIONS, AND SO ON. IF YOU KNOW THAT THE OUTCOME OF YOUR LEARNING WILL BE THE FINISHED CONSTRUCTION OF YOUR HOUSE, YOU ARE NOT LIKELY TO SHRINK FROM TACKLING THE PROBLEMS OF ARITHMETIC AND GEOMETRY INVOLVED.

THE SMITH-HUGHES ACT WILL BE 59 YEARS OLD NEXT YEAR WHEN WE CELEBRATE THE 200TH ANNIVERSARY OF AMERICAN INDEPENDENCE. BUT THE SMITH-HUGHES ACT WAS ONLY A STEP IN FORMALIZING A CONCEPT THAT HAD BEEN AROUND FOR A VERY LONG TIME. VOCATIONAL EDUCATION BEGAN WHEN A FATHER FIRST SHOWED A SON HOW TO MAKE A STONE AX.

AMERICA HAS BEEN SINGULARLY ENDOWED WITH CONDITIONS FAVORABLE TO AN EXCEPTIONALLY HIGH STANDARD OF EDUCATION. WE ARE FORTUNATE IN HAVING AS OUR COMMON LANGUAGE A SYSTEM OF COMMUNICATION CONDUCIVE TO THE MOST COMPLICATED EXCHANGE OF SCIENTIFIC KNOWLEDGE AND ABSTRACT IDEAS. WE HAVE BEEN RICHLY BLESSED WITH A COMBINATION OF NATURAL RESOURCES TO AID THE DEVELOPMENT OF A HIGH TECHNOLOGY. AND, LAST BUT NOT LEAST, LET US USE THE OCCASION OF THE FORTHCOMING BICENTENNIAL TO REAWAKEN OUR SENSE OF PRIDE AND GRATITUDE FOR THE WISDOM OF THE MEN WHO GATHERED IN PHILADELPHIA TO FASHION A SYSTEM OF SELF-GOVERNMENT THAT WOULD GUARANTEE OUR COLLECTIVE INDEPENDENCE AND OUR PERSONAL FREEDOM.

THE FIFTY-FIVE SIGNERS OF THE DECLARATION OF INDEPENDENCE WOULD PROBABLY BE AMUSED AT THE IDEA OF VOCATIONAL EDUCATION AS SOMETHING SEPARATE AND DIFFERENT FROM EDUCATION IN GENERAL. I SUSPECT THAT BENJAMIN FRANKLIN, IN PARTICULAR, WOULD HAVE MADE SOME SPLENDID JOKE ABOUT DIVISION OF EDUCATIONAL LABOR INTO SO MANY DISTINCT UNITS.

FRANKLIN WAS ALREADY FAMOUS AS A SCIENTIST WHEN HE BECAME INVOLVED IN THE POLITICS OF THE NEW NATION. HE WAS SELF-TAUGHT NOT ONLY IN LAW AND DIPLOMACY BUT IN PHYSICS, CALCULUS, MUSIC, AND PHILOSOPHY. HE WAS AN INVETERATE TINKERER THROUGHOUT HIS LIFE.

THOMAS JEFFERSON, WHOSE EDUCATION WAS AS ARISTOCRATIC AS FRANKLIN'S WAS NOT, WAS AN ARCHITECT IN WOOD AND STONE AS WELL AS AN ARCHITECT OF WORDS. AN INTENSELY CURIOUS MAN, JEFFERSON'S ENTHUSIASM FOR LIFE-LONG LEARNING EARNED HIM PERSONAL ACHIEVEMENTS IN SCIENCE, AGRICULTURE, LINGUISTICS, AND MANY OTHER FIELDS.

ANOTHER CLASSICALLY EDUCATED SIGNER, FRANCIS HOPKINSON, WAS THE FIRST GRADUATE OF THE COLLEGE OF PHILADELPHIA. IN ADDITION TO HIS KNOWLEDGE OF LAW, HE COMMANDED CONSIDERABLE TALENT FOR LITERATURE, DRAWING, AND MUSIC AND MADE USE OF ALL OF THEM IN THE SERVICE OF THE YOUNG COUNTRY. HE WROTE SONGS, DREW THE SEAL OF THE STATE OF NEW JERSEY, AND DESIGNED THE AMERICAN FLAG.

MOST SIGNERS OF THE DECLARATION WERE BOTH SCHOLARS AND PRACTICAL MEN, VERSATILE INDIVIDUALS WITH DIVERSE BACKGROUNDS AND INTERESTS WHICH THEY FORGED INTO THE MAKING OF A NEW AND GREAT NATION. THE THINKER, THE DREAMER, THE TRADESMAN, THE FARMER -- ALL SHARED EQUALLY IN CREATING AMERICA. OUR STRENGTH IS FOUNDED ON DIVERSITY.

THE CHALLENGE TO VOCATIONAL EDUCATION IS TO MAKE EACH OF ITS STUDENTS AWARE OF HIS INDIVIDUAL CONTRIBUTION TO THE COMMON GOOD IN AN AGE OF COMPLEXITY AND CYNICISM. WHAT IS THE RELEVANCE OF EACH STUDENT'S SPECIALIZED LEARNING ACTIVITY TO THE LARGER GOAL OF A MEANINGFUL LIFE?

SOME TIME AGO I USED THE PHRASE "LIBERALIZING VOCATIONAL EDUCATION AND VOCATIONALIZING LIBERAL EDUCATION" TO SUGGEST THAT THERE IS REALLY NO SUITABLE WAY OF CARVING UP EDUCATION INTO DISTINCT COMPONENTS. TO ATTEMPT TO SEPARATE WHAT A MAN KNOWS INTO INDEPENDENT MODULES IS LIKE TRYING TO SEPARATE THE PARTS OF THE MAN HIMSELF -- A LEG HERE, AN ARM THERE, AND SO ON. THE TRULY EDUCATED INDIVIDUAL PARTAKES OF EDUCATION IN ALL ITS GUISES AND USES SKILLS GAINED IN ONE SPHERE TO ENHANCE KNOWLEDGE GATHERED FROM OTHERS.

THE TASK OF THE VOCATIONAL EDUCATOR IS TO REMAIN COMMITTED TO THE GOAL OF PERFORMANCE-BASED LEARNING WHILE RECOGNIZING THAT IN ORDER TO PRODUCE A SOLID RESULT IN TERMS OF PERFORMANCE THE LEARNER MUST BE TREATED AS A WHOLE INDIVIDUAL WHOSE NEEDS AND MOTIVATION TRANSCEND THE SPECIFIC SKILLS TO DO A TANGIBLE JOB. A POET NAMED BERTON BRALEY SUMMED IT ALL UP IN THESE WORDS:

> THE DRUDGE MAY FRET AND TINKER OR LABOR WITH LUSTY BLOWS. BUT BACK OF HIM STANDS THE THINKER, THE CLEAR-EYED MAN WHO KNOWS; FOR INTO EACH PLOW OR SABER, EACH PIECE AND PART AND WHOLE, MUST GO THE BRAINS OF LABOR, WHICH GIVES THE WORK A SOUL! BACK OF THE MOTORS HUMMING, BACK OF THE BELLS THAT SING, BACK OF THE HAMMERS DRUMMING, BACK OF THE CRANES THAT SWING, THERE IS THE EYE WHICH SCANS THEM WATCHING THROUGH STRESS AND STRAIN, THERE IS THE MIND WHICH PLANS THEM — BACK OF THE BRAWN, THE BRAIN!

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